Remarks/Arguments

Reconsideration of the rejection of claims 1-4 under 35 USC 103 based on Uchida et al in view of Klein et al is respectfully requested for the following reasons.

Applicant's invention relates to fiber fabric formed by braiding carbon threads or fiber reinforced plastics, etc. that have been impregnated with resin by using a braider device. This invention provides a braiding composition backing made of a thin, uniform braiding layer by braiding a wide yarn (prepreg slit yarn) having a band shape with a wide width on a mandrel without gap. Moreover, this invention also provides a manufacturing method which is also made applicable to a mandrel with a larger diameter by changing only the width of the wide yarn without the necessity of changing the number of plaited threads, and makes it possible to effectively manufacture a sheet-shaped braiding composition backing with a wide width.

In order to achieve the above-mentioned objective, applicant's invention is more specifically provided with processes in which: a braiding composition backing using a wide yarn, wherein pairs of first braiding threads extending parallel to each other, and having a braiding angle $+\theta°$ the axis of the mandrel, and second braiding threads extending parallel to each other, and having braiding angle $-\theta°$ to the axis of the mandrel are composed of wide yarns having a band shape with a wide width, and the wide yarns are braided around the mandrel, and disposed continuously with each other in the width direction without gap in the width direction to form a cylindrical braiding layer so that the resulting layer is cut in the axial

direction of the mandrel to be formed into sheets to form the braiding composition backing.

In accordance with the braiding composition backing using a wide yarn and its manufacturing method of applicant's invention having the above-mentioned arrangements, wide threads having a band shape (prepreg slit yarns) are braided around the mandrel m without any gap so that it is possible to form a thin, uniform braiding composition backing in comparison with a conventional braided material using threads having a round shape in the cross section thereof. Moreover, in an attempt to form a uniform braiding composition backing without any gap by using determined set angle and mandrel diameter, a plurality of layers need to be superposed in the case of conventional threads having a round shape in the cross section thereof, resulting in an increased thickness to fail to provide a uniform, thin backing; however, applicant's invention makes it possible to solve this problem. Moreover, the method of this invention is also made applicable to a mandrel with a larger diameter by changing only the width of the band without the necessity of changing the number of plaited threads. Furthermore, in this invention, band-shaped threads aligned in the axial direction of the mandrel, which are referred to as axial threads, are braided together so that it is possible to form a thin, uniform FRP backing. Since the braiding composition backing of this invention is thin and uniform, it is possible to form a structure with a uniform thickness even when multiple layers are superposed.

The Office Action in paragraph 2 indicates that Uchida et al do not disclose cutting a resulting braid in the axial direction so as to form a sheet for further use. The subject matter described by Klein et al. relates to a thread having a

round shape in its cross section (traprepreg yarn) is used as the diagonal thread 14 and 16. In such a braiding manufacturing method by the use of a thread with a round shape in its cross section, it is not possible to obtain a thin, uniform braiding composition backing. In other words, in this conventional braiding manufacturing method, a plurality of braiding layers need to be superposed in an attempt to form a uniform braiding layer, resulting in an increased thickness to fail to provide a thin, uniform braiding composition backing.

Independent claims 1 and 4 are amended to emphasize the foregoing distinguishing features of applicant's invention. In view of the foregoing, claims 1-4 as amended are believed to patentably distinguish over Uchida et al and Klein et al within the meaning of 35 USC 103.

Favorable action on this application is respectfully requested.

Respectfully submitted,

HODGSON RUSS LLP

By 

Martin G. Linihan,
Reg. No. 24, 926

One M&T Plaza, Suite 2000
Buffalo, New York 14203-2391
Tel: (716) 848-1367 (direct)
DATE: August 31, 2005